NAME _____

MATH 114: FALL 2021 QUIZ 4 (10PTS+4PTS BONUS)

You may use your homework solutions. I need to look at your class notes while you take this. You are allowed a 3x5 inch card of formulas. Thanks! 2pts per problem.

Problem 1: Simplify $\cos 41x \sin x + \sin 41x \cos x$.

Problem 2: If a triangle has interior angles $A = 10^o$, $B = 50^o$, $C = 120^o$ and the length of the side opposite A has length $a = 3$ then find the length of side b opposite B and the length of c opposite C. *hint: use the law of sines.*

Problem 3: A triangle has side lengths $a = 2$, $b = 3$ and the angle between sides a, b is 110^o. Find the length of the remaining side. *hint: use the law of cosines.*

Problem 4: Solve $\tan x = \sqrt{3}$ for $x \in [0, 2\pi)$

Problem 5: Simplify $\sec^3 x + \tan^2 x \sec x$.

Problem 6: Solve $-2\cos^2 x - 3\sin x + 3 = 0$ for $x \in [0, 2\pi)$

Problem 7: Solve $\sec^2 \theta = 4$ for $\theta \in [0, \pi)$.